

**REMARKS**

Claims 1-14 are pending in this application. Claims 1 and 10 are independent claims. Claims 2-9 and 11-14 are dependent claims.

Claims 1-14 have been rejected. Amendments to claims 1-14 are presented herein. Claims 10-14 have been amended to improve form without changing substance. Claim 15 is newly added in this response. No new matter is being presented, and approval and entry are respectfully requested.

**Rejections Under 35 U.S.C. § 112, Second Paragraph**

In numbered paragraphs 1-3 on page 2 of the Office Action, the Examiner rejected claims 1-14 as being indefinite for the reasons set forth therein. Applicant submits that amendments to the claims presented above meet the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, Applicant respectfully requests withdrawal of the rejections to claims 1-14 under § 112, second paragraph.

**Rejections Under 35 U.S.C. §§ 102 and 103**

In numbered paragraphs 4 and 5 on pages 2-5 of the Office Action, the Examiner rejected claims 1-7 and 9-13 under 35 U.S.C. § 102(e) as being anticipated by Fatehi et al. (U.S. Patent No. 6,512,612).

In numbered paragraph 7 on page 6 of the Office Action, the Examiner rejected dependent claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Fatehi in view of Kaminow et al. (U.S. Patent No. 5,623,356). Also, in numbered paragraph 8 on pages 6 and 7 of the Office Action, the Examiner rejected dependent claims 9 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Fatehi.

Applicant respectfully traverses these rejections for the reasons presented below.

Claim 1 recites, as amended, "one or more sub-switch units having a portion of the signal inputs, which are not all of the signal inputs that the apparatus is able to accommodate, and switching and connecting the portion of the signal inputs to a portion of the signal outputs, which are not all of the signal outputs that the apparatus is able to accommodate, wherein the one or more sub-switch units form a non-complete switch, through which all the signal inputs to the apparatus are switched and connected."

Referring to the embodiment of the present invention shown in Fig. 14, for example, portions of all the signals output from a wavelength demultiplexing circuit are input to different ones of the sub-switch circuits. Each sub-switch circuit respectively switches and connects the received portions of the signals to a wavelength multiplexing circuit.

Each sub-switch circuit is independent and may be added according to the number of signals, for example, as illustrated in the embodiment of the present invention shown in Figs. 13-15, for example. Thus, any independent sub-switch circuit does not achieve the capabilities of a complete group switch, such as the complete group switch shown in Fig. 1, for example. However, simplification, downsizing, and ease of expandability of the entire switch system are achieved by the present invention.

The Fatehi reference relates to an intelligent optical router for combining packets from one or more underutilized wavelengths onto another underutilized wavelength (Fatehi at col. 1, lines 5-9). The Kaminow reference relates to a combined wavelength router and switch apparatus that increases the degree of connectivity in a WDM optical communication system (Kaminow at col. 1, lines 9-12).

Fatehi and Kaminow respectively disclose ordinary optical switches (i.e., complete group switches), as shown, for example by switch 201 in Fig. 3A of Fatehi and Fig. 1 of Kaminow. In contrast, the apparatus of the present invention, as recited in claim 1, uses one or more independent sub-switches to perform connection switching between input and output signals.

Therefore, it is submitted that claim 1 patentably distinguishes over the prior art. Similar to claim 1, independent claim 10 recites, as amended, a signal switching and connection method, including "providing a non-complete group switch; inputting a portion of the plurality of signals into the non-complete group switch; and switching, connecting, and outputting the portion of the signals, wherein all of the plurality of signals are switched and connected by the

non-complete group switch by performing said inputting a portion of the plurality of signals and said switching, connecting, and outputting the portion of the signals for all of the signals input to the optical node device." Thus, for at least the reasons presented above, it is submitted that claim 10 patentably distinguishes over the prior art.

The dependent claims depend respectfully from the above-discussed independent claims and are patentable over the prior art for at least the reasons discussed above.

Therefore, Applicant submits that claims 1-14 patentably distinguish over the prior art. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under §§ 102 and 103.

#### **New Claim**

Claim 15 is newly added with this response to alternatively define the present invention. Claim 15 recites a switch including "a plurality of independent sub-switch units respectively comprising a different portion of the input ports and a different portion of the output ports, each sub-switch unit receiving a different portion of the plurality of signals through the different portion of the input ports, and switching and connecting the different portion of the plurality of signals to the different portion of the output ports, wherein the plurality of sub-switch units comprises a non-complete switch through which all of the signals are switched." These features are not taught or suggested by the cited references. Thus, for at least the reasons presented above, Applicant submits claim 15 patentably distinguishes over the prior art. Accordingly, Applicant respectfully requests allowance of the new claim.

#### **Conclusion**

It is submitted that none of the references, either taken alone or in combination, teach the present claimed invention. Thus, claims 1-15 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

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If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Finally, if there are any additional fees associated with filing of this response, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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